

Abstract:

After forming the first shield layer 23 on basic substances 21 and 22, a GMR film 25 is formed and ~~is formed~~ and ~~is formed~~, in addition, a first insulation layer 28' where the edge defines a reference position of a throat height zero is formed on a first magnetic layer 27, a gap layer 28 is formed on a magnetic pole portion of the first magnetic layer 27 and the first insulation layer, then a second magnetic layer 29 extended above the first insulation layer 38' from the upper side of the magnetic pole portion of the first magnetic layer 27 is formed, after smoothing its surface by the second insulation layer 31, thin film coils 32 and 34 are formed on this second insulation layer, and the third magnetic layer 36 is formed on the insulation layers 33 and 35 where the magnetic pole portion and the thin film coil of the second above magnetic layer are isolated. In order to cancel the saturation of the magnetic flux in the magnetic pole portion effectively, and to prevent the widening of width of the effect track and the decrease in the yield, the third above magnetic layer is made retreated from the air bearing surface, and is connected to rear region from the magnetic pole portion of the second magnetic layer. A rear region from the magnetic pole portion of the second magnetic layer 29 is made in the shape of fan and connected to the third magnetic layer 36 in enough area.